

REMEDIAL ACTION REPORT

**K. HOVNANIAN COMPANIES
Tank T408-6 (Block 408)
University Heights III - Sites C & E
Newark, Essex County, New Jersey**

Spill Case# 94-12-01-1135-25

Prepared for

**K. Hovnanian Companies
65 Jackson Drive
Cranford, NJ 07016**

Prepared by

**J M Sorge, Inc.
50 County Line Road
Somerville, New Jersey 08876**

JMS Project 92050

March 1995

KHOV005471

TABLE OF CONTENTS

	Page
1.0 INTRODUCTION	1
1.1 TECHNICAL OVERVIEW - COMPLIANCE WITH N.J.A.C. 7:26E	1
2.0 FINDINGS/REMEDIAL ACTION REPORT	2
2.1 1,000-GALLON #2 HEATING OIL TANK	2
3.0 SITE RESTORATION AND RESIDUALS DISPOSAL	4
4.0 CONCLUSION AND RECOMMENDATIONS	5
5.0 TWO PART CERTIFICATION	6

KHOV005472

LIST OF FIGURES

Number	Title
1	Site Location Map
2	Site Plan Illustrating Post-Excavation Sample Locations

APPENDICES

A	Laboratory Analytical Report
B	Tank Cleaning and Disposal Receipts
C	Clean Fill Receipts
D	Laboratory Results - Stockpiled Soil
E	Soil Recycling Documentation

1.0 INTRODUCTION

J M Sorge, Inc. (JMS) was retained by K. Hovnanian at Newark Urban Renewal Corp. III, Inc. (Hovnanian) to provide environmental consulting support services with regard to a discharge from an underground storage tank (UST) located near the corner of Matthew Street and Churchman Street in Newark, Essex County, New Jersey. Please note that Matthew Street was formerly known as Newark Street; Churchman Street was formerly known as Norfolk Street. A general site location map is provided as Figure 1.

The subject property is currently vacant land, although a residential structure had previously been located on the site. The City of Newark owned the property and razed the residential structure in 1993. Hovnanian purchased the vacant land from the City of Newark in late 1993 for the purpose of redeveloping the property as part of a residential condominium complex. The UST was discovered during the preliminary site grading/excavating activities associated with pre-development. Based on communications with site personnel and local officials, it was determined that the tank had apparently been used to store heating oil which fueled the furnace located in the former residential structure on this property. As a result, the tank was un-regulated and was not registered with the New Jersey Department of Environmental Protection (NJDEP).

The tank was discovered by Spectrum Constructors, Inc. (SCI) of Fairfield, New Jersey during the excavation of an area designated for the installation of a section of the site storm water control system. Due to the presence of apparent soil contamination in the vicinity of the UST system, Hovnanian immediately notified the NJDEP Hotline to report the incident, and case number 94-12-01-1135-25 was assigned to the discharge. A written Discharge Confirmation Report was then prepared and submitted to NJDEP in January 1995.

JMS was retained to provide subsurface evaluation services related to the UST discharge at the site. JMS is certified to conduct UST closure and subsurface evaluation activities (#1800007). The UST closure program commenced on December 1, 1994. The following report provides a description of the tank removal program and related remedial activities conducted at the site.

1.1 TECHNICAL OVERVIEW - COMPLIANCE WITH N.J.A.C. 7:26E

The tank closure, remedial and post-remedial activities were conducted in accordance with N.J.A.C. 7:26E-6.3 and 6.4. All samples were collected in accordance with the procedures outlined in the Department's Field Sampling Procedures Manual (May 1992) and the Technical Requirements for Site Remediation (N.J.A.C. 7:26E). Post-excavation soil samples were analyzed by Envirotech

Research, Inc. of Edison, New Jersey (#12543). Laboratory analytical methods were performed in accordance with the requirements outlined in N.J.A.C. 7:26E-2.1; parameters were selected based on the analytical requirements for petroleum storage and discharge areas (N.J.A.C. 7:26E-2.1[d]).

Complete copies of all laboratory analytical reports for the post-excavation samples are provided in Appendix A of this report. As indicated in the laboratory reports, all samples were submitted to the designated laboratory and analyzed within appropriate sample holding times. All laboratory method detection limits were within acceptable ranges, well below the applicable soil cleanup criteria.

The single UST at the site was the only area of concern. As expected from a discharge associated with a #2 heating oil tank, elevated levels of total petroleum hydrocarbons (PHCs) were identified in the affected soils removed during the remedial program.

2.0 FINDINGS/REMEDIAL ACTION REPORT

The former location of the 1,000-gallon, non-regulated #2 heating oil UST is illustrated on Figure 2. The following sections describe the specific tank closure and subsurface evaluation activities implemented by JMS during the removal of this UST system.

2.1 1,000-GALLON #2 HEATING OIL TANK

The tank was located on the southeast corner of Block 408. As illustrated on Figure 2, the tank was positioned approximately 50 feet north of Churchman Street and approximately 70 feet west of Matthews Street. As discussed in Section 1, the tank was discovered on December 1, 1994 during initial excavation activities associated with preparing the razed site for redevelopment; the discharge was discovered when the tank was uncovered. Tank removal was conducted on December 1, 1994 by SCI under the direct supervision of JMS personnel.

The single-walled steel tank measured 4-feet in diameter by 10-feet, 8-inches in length and had a nominal storage capacity of 1,000-gallons. The top of the tank was located approximately 4-feet below the surface (approximately 2 feet of building rubble and 2 feet of native soil).

Prior to fully uncovering the tank, the surficial soils in the area of the UST were visually inspected, and oil staining was observed. Therefore, all surficial soil was removed and stockpiled on plastic sheeting. Once all surficial soil was removed and the top of the tank was exposed, a section of the tank shell

was removed to allow for internal cleaning and inspection of the vessel. Lorco Petroleum Services, Inc. (LORCO) of Old Bridge, New Jersey was contracted to remove the residual tank contents. Inspection of the tank contents revealed the presence of old, weathered heating oil.

Following removal of all free liquids, the interior of the tank was squeegeed and wiped clean with petroleum-absorbent towels. All residuals generated from cleaning the tank were removed by LORCO utilizing an industrial vacuum tank truck. The tank residuals were transported by LORCO to their facility in Old Bridge, New Jersey. LORCO is an NJDEP-licensed waste hauler and oil recycling facility. A copy of the disposal manifest for the residual waste is provided in Appendix B.

Following internal inspection and cleaning, the tank was removed from the excavation by SCI and placed on plastic sheeting. Once secured, JMS personnel inspected the tank shell for evidence of holes or pitting. Several small holes and areas of minor deterioration were identified in the tank shell and in the area of the fill pipe. Following inspection, the empty tank shell was labeled and transported to Absolute Auto & Truck Salvage, Inc. of Middlesex, New Jersey, where it was disposed of as scrap metal. A copy of the receipt for this transfer is provided in Appendix B.

Following tank removal, the excavation was expanded to remove all tank envelope material and surrounding affected soils. The excavation was expanded based on visual observations and screening with a photoionization detector (PID). Since this area of the site was designated for the installation of a section of the site storm water control system, all potentially affected soils were removed to ensure that no significant residual oil contamination remained. Soil excavation activities commenced on December 1, 1994 but were delayed due to weather and site construction activities. Soil excavation activities were completed on December 14, 1994. The final excavation was irregularly shaped and measured an average of approximately 30-feet wide by an average of approximately 45-feet long. The total base area of the excavation was approximately 1,350 square feet. The base of the excavation was located approximately 10.5-feet below grade. Native clay soil was encountered at a depth of 10-feet below grade. No groundwater was encountered in the excavation. Based on a review of data from numerous nearby sites, groundwater at the subject site is expected to occur at a depth of approximately 20 feet below grade. The configuration of the final excavation is illustrated on Figure 2.

Following soil excavation activities, the base and sidewalls of the excavation were inspected and field screened with a PID; no PID readings were obtained. Therefore, on December 14, 1994 JMS collected a total of eight (8) post-excavation soil samples (T408-6PE1 through T408-6PE8). Post-excavation samples were collected in accordance with N.J.A.C. 7:26E-6.4(a)2.ii.(2). Six

(6) soil samples were collected from the base of the excavation sidewalls, resulting in the collection of one sample for approximately every 25 feet of sidewall. Two (2) soil samples were collected from the bottom (base) of the excavation, resulting in the collection of one sample for approximately every 675 square feet of bottom area. The approximate location of each post-excavation soil sample is illustrated on Figure 2.

All samples were analyzed for PHCs. The laboratory analytical results for these analyses are summarized on Table 1. The complete laboratory report is provided in Appendix A. As the results indicate, no PHCs were detected above the laboratory method detection limit of 25 parts per million (ppm).

3.0 SITE RESTORATION AND RESIDUALS DISPOSAL

Since the area of the UST was located within an area designated for the construction of a storm water control system for the site, the excavation was backfilled in stages according to the site construction schedule. A total of approximately 100 tons of clean stone, obtained from Millington Quarry, Inc. was used to backfill portions of the excavated area. The stone material was used in the areas associated with the construction of the storm water control system. Fill delivery tickets/receipts for this material are provided in Appendix C. Since the entire redevelopment project area has a net soil export, the remainder of the excavated area was backfilled with clean, native soils obtained from other portions of the redevelopment site. The storm water system was constructed and the entire area was then brought to the grade required under the site development plan.

As discussed in Section 2, the residual tank contents were transported to the LORCO facility in Old Bridge, New Jersey for recycling (Appendix B). Approximately 450 cubic yards of affected soils were removed during the tank closure program. All soils were stockpiled on, and covered with, 6-mil polyethylene sheeting pending appropriate off-site removal. Soil reuse arrangements were then secured in accordance with the procedures outlined in the Department's Guidance Document for the Remediation of Contaminated Soils.

Prior to obtaining reuse approval from NJDEP, composite samples were collected from the stockpiled material and the samples were analyzed in accordance with the designated recycling facility's permit requirements. A total of five (5) composite samples were analyzed for PHC using both method 418.1 and method 8015. One sample was also analyzed for TCLP metals, PCBs, total organic halides and RCRA characteristics. A copy of the laboratory report for this analyses is provided in Appendix D.

Based on the sample results obtained, it was determined that the soil was considered non-hazardous. Therefore, an exemption to the solid waste flow regulation (N.J.A.C. 7:26-6) was obtained from NJDEP, Bureau of Medical Waste and Technical Assistance for shipment of the soil to an approved facility for reuse. All non-hazardous petroleum contaminated soil (total of 683.9 tons) was then transported to the Soil Remediation of Philadelphia, Inc. (SRP) facility in Philadelphia, Pennsylvania for appropriate reuse/recycling. The soil was removed from the Hovnanian site to the SRP facility on February 9 and 10, 1995. Copies of the NJDEP waste flow exemption approval, the non-hazardous material manifests and the final certificate of destruction/recycling are provided in Appendix E.

4.0 CONCLUSION AND RECOMMENDATIONS

JMS has implemented an UST investigation at the Hovnanian property located in Newark, New Jersey. The investigation addressed a previously abandoned, 1,000-gallon non-regulated heating oil tank which was identified during initial development activities at the site.

All remedial activities were conducted in accordance with N.J.A.C. 7:26E. The results of the post-excavation, verification soil samples have confirmed the effectiveness of the remedial activities conducted at the site. No contaminants remain in excess of the most stringent Soil Cleanup Criteria currently proposed by NJDEP, and no further action is proposed. Therefore, it is requested that the Department close the spill case associated with the discharge at this property.

5.0 TWO-PART CERTIFICATION

PART A

The following certification shall be signed by the highest ranking individual with overall responsibility for implementing the remediation of a site:

"I certify under penalty of law that the information provided in this document is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties."

Printed Name: ROBERT D. JACKSON Title: PRESIDENT

Signature: [Signature] Date: 3/14/95

Sworn and Subscribed Before Me

on this fourteenth

Date of March, 1995

Kelly Higgins

Notary

KELLY HIGGINS
NOTARY PUBLIC OF NEW JERSEY
My Commission Expires May 25, 1998

PART B

The following certification shall be signed as follows:

- i. For a corporation, by a principal executive officer of at least the level of vice president;
- ii. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively;
- iii. For a municipality, State, Federal, or other public agency, by either a principal executive officer or ranking elected official; or
- iv. For persons other than i. through iii. above, by the person with legal responsibility for the site.

"I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties."

Printed Name: ROBERT D. JACKSON

Title: PRESIDENT

Signature: [Handwritten Signature]

Date: 3/14/95

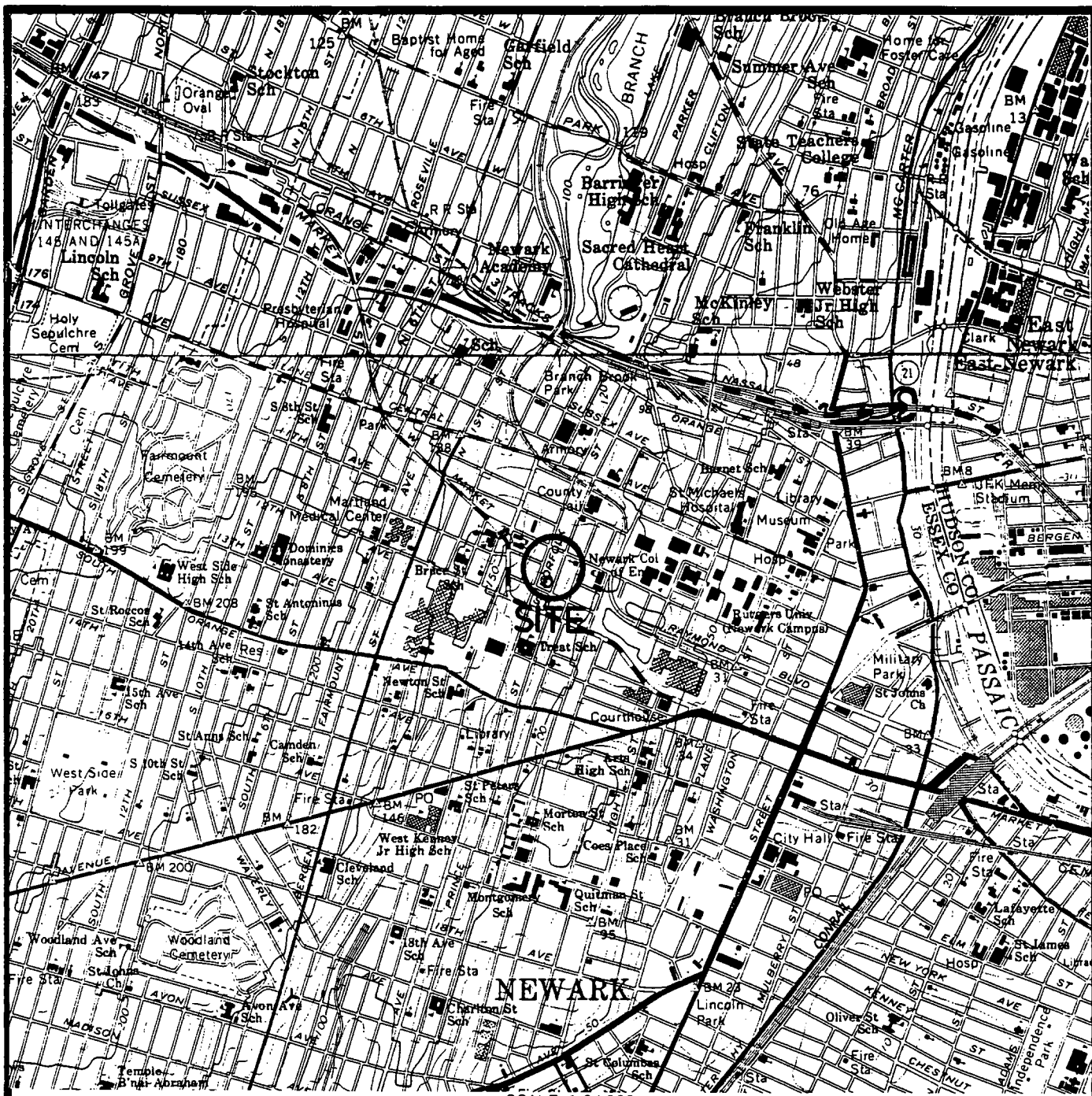
Sworn and Subscribed Before Me

on this fourteenth

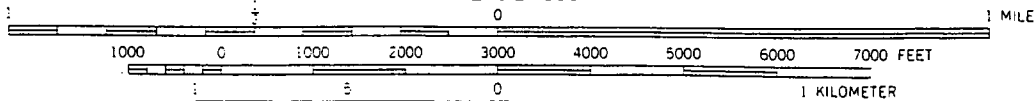
Date of March, 1995

Notary [Handwritten Signature]

KELLY HIGGINS
NOTARY PUBLIC OF NEW JERSEY
My Commission Expires May 25, 1998

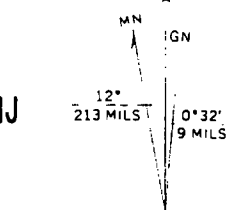


SCALE 1:24,000



SOURCE:

U.S.G.S. 7.5
MINUTE SERIES
ELLIZABETH &
ORANGE
QUADRANGLES - NJ



UTM GRID AND 1981 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

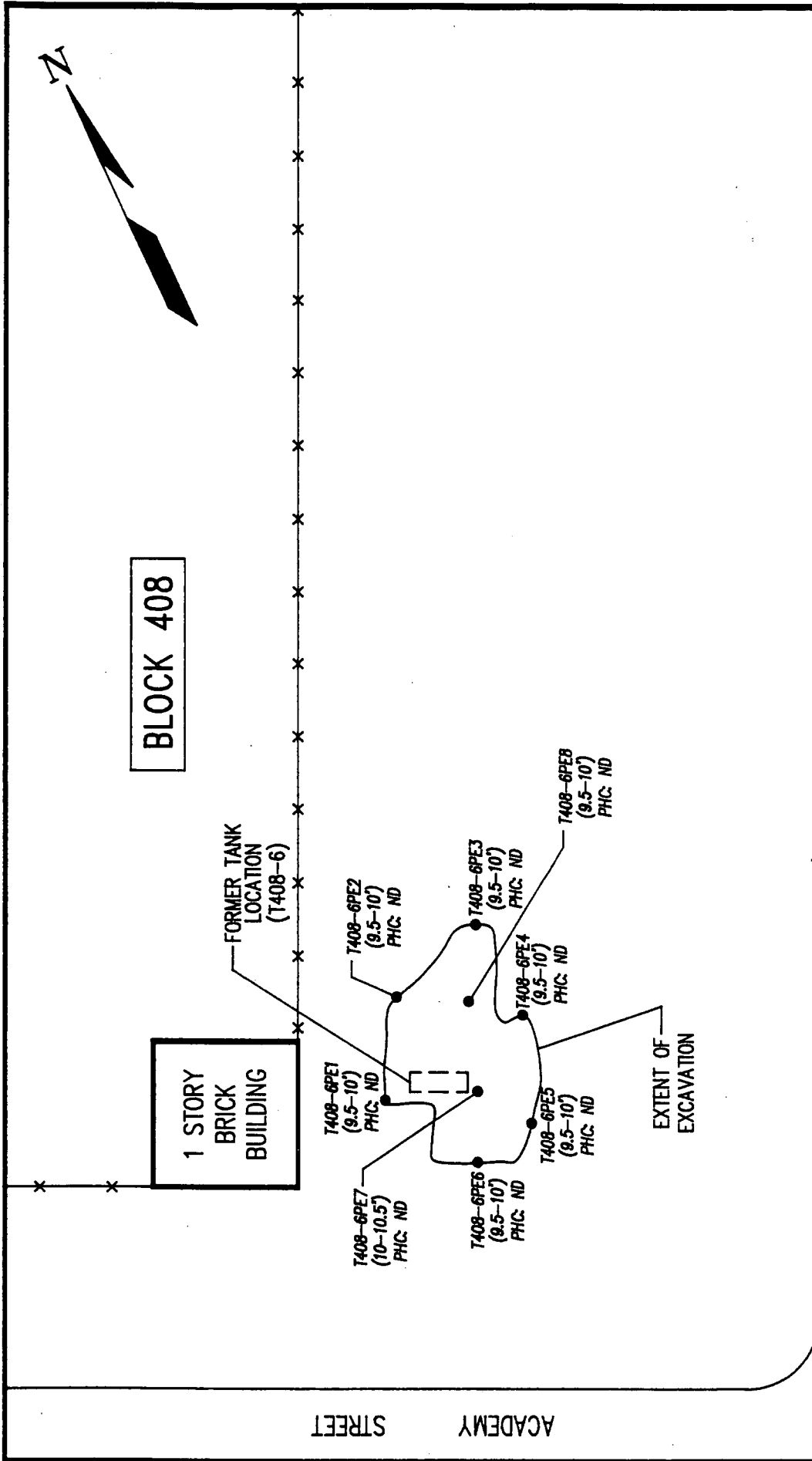
JM SORGE, INC.

**HOVNANIAN
SITES E & C**

SITE LOCATION MAP

KHOV005481

FIGURE 1



28500AD0H

NEWARK STREET

JM SORCE, INC. HOVNANIAN SITES E & C

LEGEND

• SAMPLE LOCATIONS



SITE PLAN ILLUSTRATING
POST EXCAVATION SAMPLE LOCATIONS

FIGURE 2

TABLE 1
HOVNANIAN
SOIL SAMPLING RESULTS SUMMARY

SAMPLE NUMBER LABORATORY SAMPLE NUMBER SAMPLE DEPTH (ft) DATE COLLECTED	PROPOSED SOIL CLEANUP STANDARD	T-408-6-PE-1 17716 9.5-10 12/14/84	T-408-6-PE-2 17717 9.5-10 12/14/84	T-408-6-PE-3 17718 9.5-10 12/14/84	T-408-6-PE-4 17719 9.5-10 12/14/84	T-408-6-PE-5 17720 9.5-10 12/14/84	T-408-6-PE-6 17721 9.5-10 12/14/84	T-408-6-PE-7 17722 10-10.5 12/14/84	T-408-6-PE-8 17723 10-10.5 12/14/84
PETROLEUM HYDROCARBONS (ppm)	10000	ND	ND	ND	ND	ND	ND	ND	ND

NOTES

ppm - Parts Per Million

ND - Not Detected

KHOV005483